

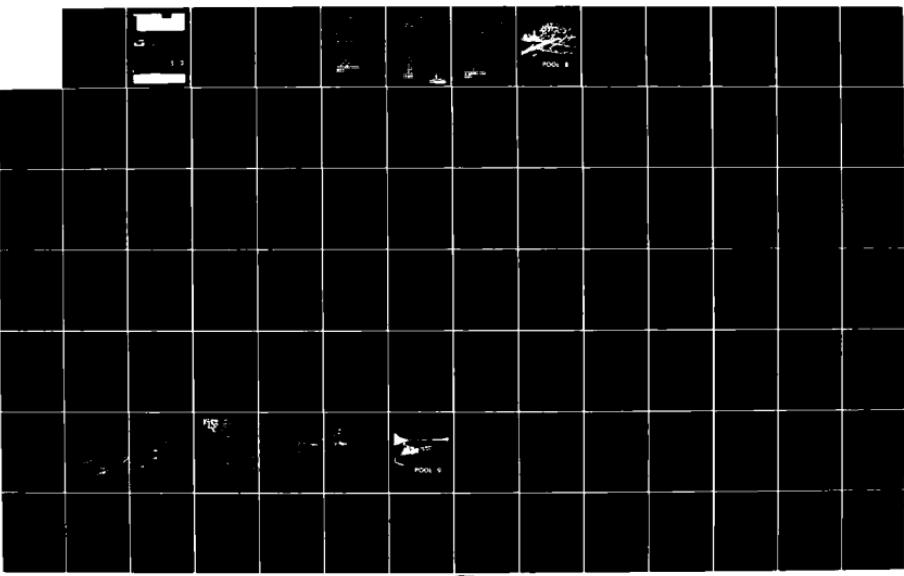
AD-A127 098 GREAT L STUDY OF THE UPPER MISSISSIPPI RIVER TECHNICAL  
APPENDIXES VOLUME 8... (U) GREAT RIVER ENVIRONMENTAL  
ACTION TEAM SEP 80

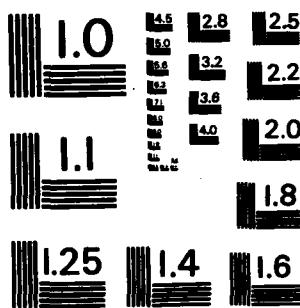
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VOLUME 8

**CHANNEL MAINTENANCE  
PART II - POOL PLANS AND SITE DESCRIPTIONS -  
POOLS 8, 9, & 10**

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle)  GREAT I STUDY OF THE UPPER MISSISSIPPI RIVER; Volume 8: Channel Maintenance		5. TYPE OF REPORT & PERIOD COVERED  6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)  Great Environmental Action Team		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS  Department of the Army Corps of Engineers, St. Paul District 1135 USPO & Custom House, St. Paul, MN		12. REPORT DATE  September 1980
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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES  Volume 8 issues in 5 parts: Part I:narrative; Part II: Pool Plans and Site Descriptions-Minnesota River; St. Croix River, St Anthony Falls, and Pools 1 and 2; Part III: Pools 3 & 4; Part IV: Pools 5, 5A, 6 & 7; Part V: Pools 8, 9, and 10.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)  Channels (waterways) Mississippi River Dredged Material		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  The channel maintenance plan is composed of a detailed dredged material placement plan (described in part I) and a set of supporting recommendations for dredging and channel maintenance. Parts II-V detail the channel maintenance plan by specific sites.		

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EDITION OF 1 NOV 68 IS OBSOLETE

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OUTLINE



GREAT I  
SEPTEMBER 1980

VOLUME 1 MAIN REPORT

TECHNICAL APPENDIXES

VOLUME 2 A. FLOODPLAIN MANAGEMENT  
B. DREDGED MATERIAL USES  
C. DREDGING REQUIREMENTS

"Original contains color plates: All DTIC reproductions will be in black and white"

VOLUME 3 D. MATERIAL AND EQUIPMENT NEEDS  
E. COMMERCIAL TRANSPORTATION

VOLUME 4 F. WATER QUALITY  
G. SEDIMENT AND EROSION

VOLUME 5 H. FISH AND WILDLIFE

VOLUME 6 I. RECREATION

VOLUME 7 J. PUBLIC PARTICIPATION  
K. PLAN FORMULATION

VOLUME 8 L. CHANNEL MAINTENANCE

PART I - NARRATIVE

PART II - POOL PLANS AND SITE DESCRIPTIONS -  
MINNESOTA RIVER, ST. CROIX RIVER,  
ST. ANTHONY FALLS, AND POOLS 1 AND 2

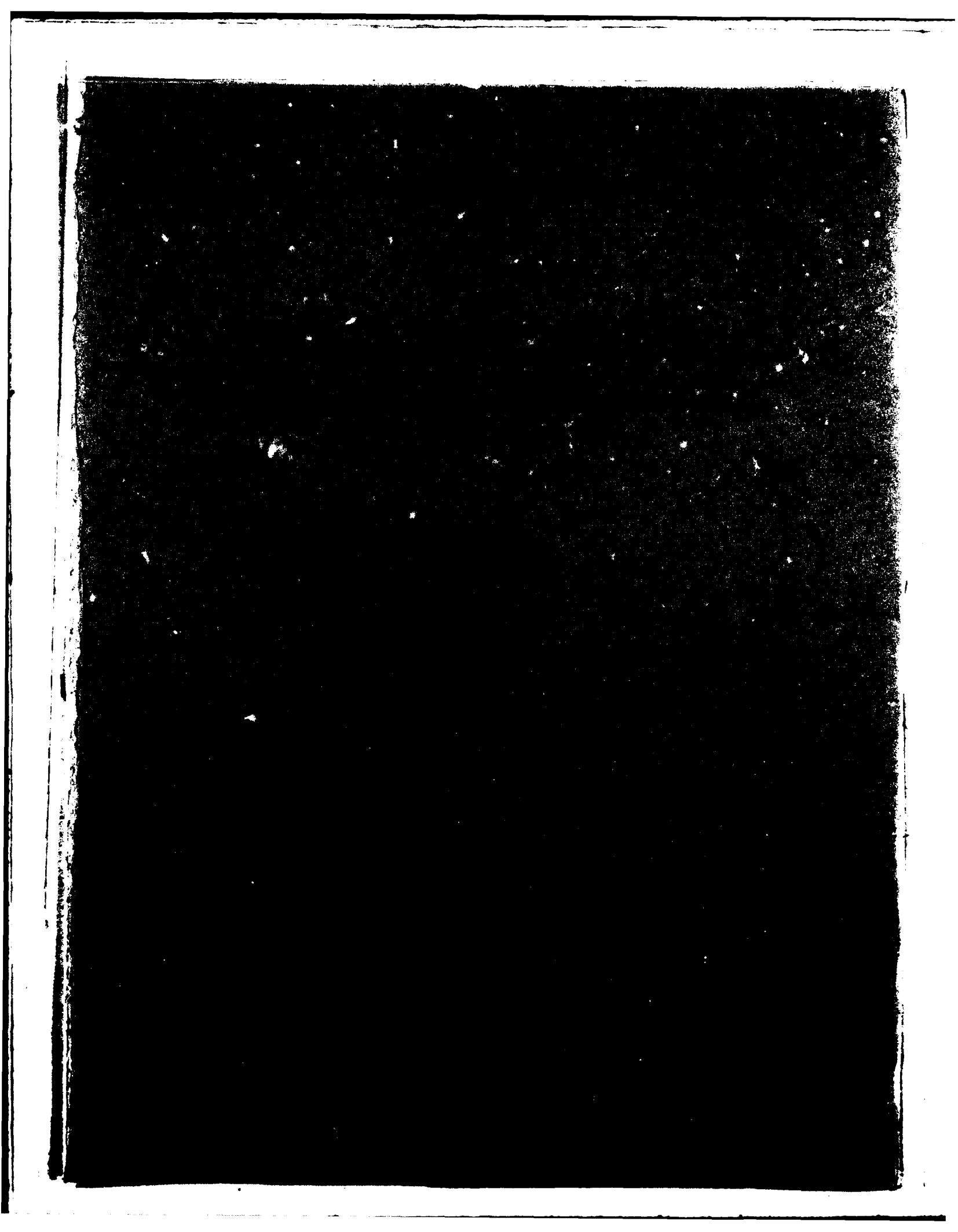
PART III - POOL PLANS AND SITE DESCRIPTIONS -  
POOLS 3 AND 4

PART IV - POOL PLANS AND SITE DESCRIPTIONS -  
POOLS 5, 5A, 6, AND 7

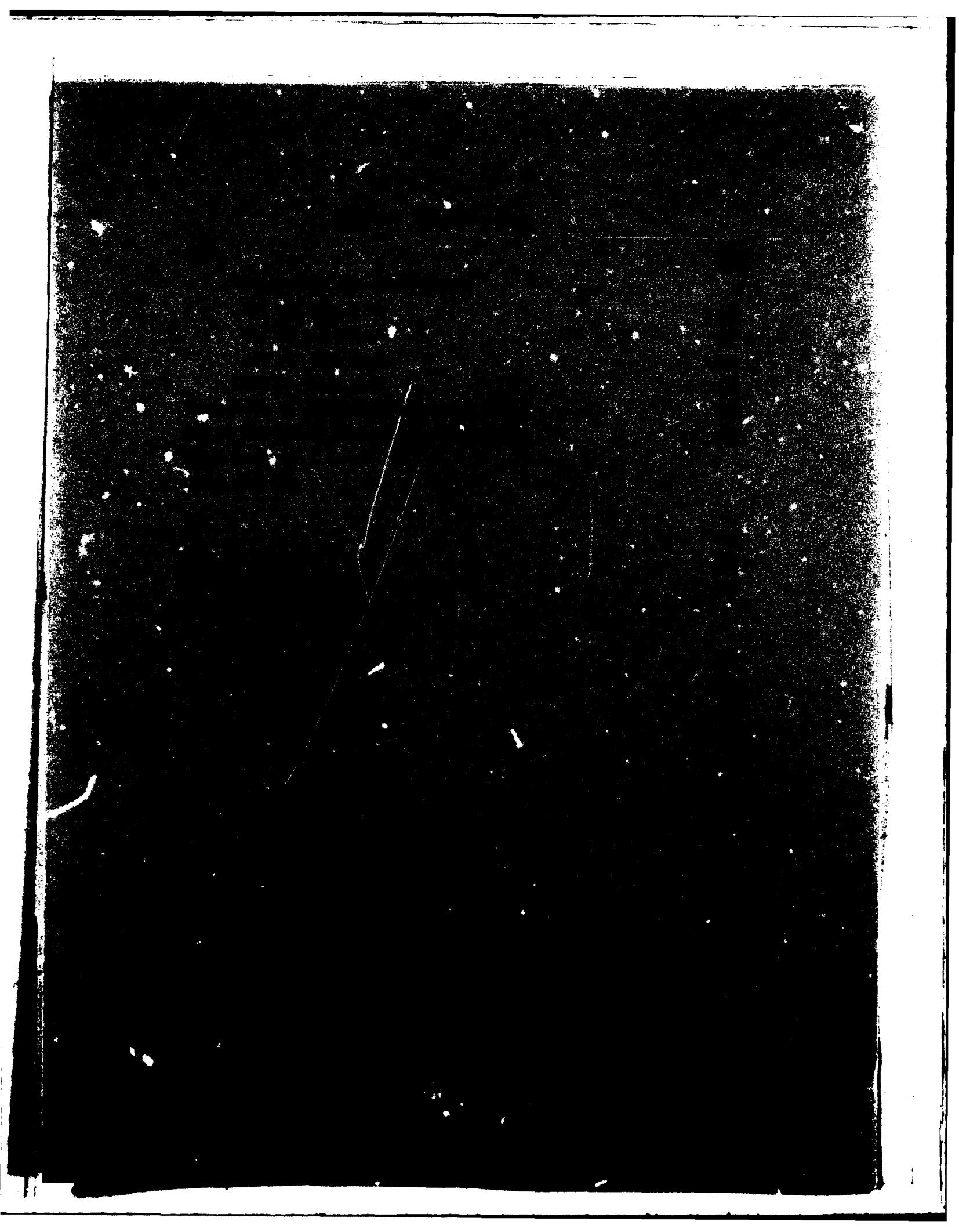
PART V - POOL PLANS AND SITE DESCRIPTIONS -  
POOLS 8, 9, AND 10

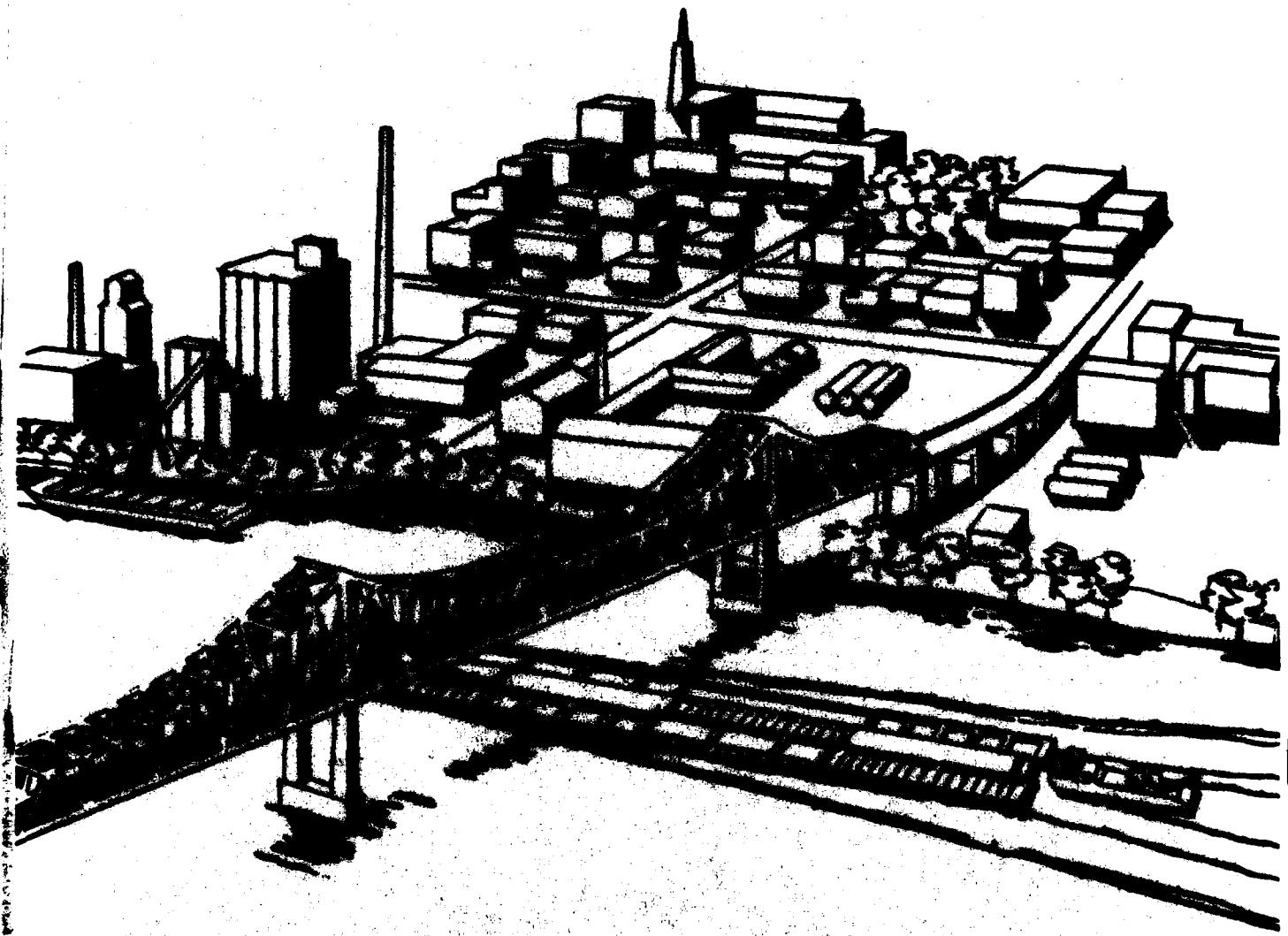
VOLUME 9 M. ENVIRONMENTAL IMPACT STATEMENT

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By _____	
Distribution/ _____	
Availability Codes	
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POOL 8

## CHANNEL MAINTENANCE PLAN SUMMARY

POOL 8

Dredge Cut	NPYMC CT 8 1985-2025	Selected Site	WID Site	EQ Site	NYP Site	NPYMC Site	NPYMC CT 8 1985-2025	Temporary sites
1. Warner's Landing	41,500	8.22	8.31	8.06	8.22	8.31	44,500	-
2. Greely Slough	45,500	8.22	8.01	8.06	8.22	8.01	52,500	-
3. Below Head of Raft Channel	239,000	8.30	8.20	8.06	8.22	8.20	262,500	-
4. Head of Raft Channel	1,018,000	8.30	8.02	8.30	8.22	8.02	1,118,000	-
5. Brownsville	654,500	8.30	8.30	8.06	8.06	8.02	718,000	-
6. Above Brownsville	904,500	8.06	8.17	8.06	8.06	8.17	1,104,500	8.17
7. Picayune Island	211,000	8.06	8.06	8.06	8.06	8.16	229,000	-
8. Root River	113,500	8.06	8.06	8.06	8.06	8.27	124,000	-
9. Sand Slough	171,000	8.06	8.15/8.06	8.06	8.06	8.15	361,000	-
10. Above and Below LaCrosse R.R. Bridge	280,500	8.28/8.06	8.28/8.06	8.06	8.06	8.07	304,000	-
							4,318,000	
	3,678,500							

## SELECTED PLAN SUMMARY

Total Volume Dredged (cy)	-	3,678,500	No. of sites with:	
Beneficial Use (cy) Potential from Selected Sites	-	3,629,500	Recreation Enhancement	- 3
Total Area (acres)	-	107	Cultural Resources Impacts	- 0
			Wetlands Affected:	
			Types 1, 2 (acres)	- 26
			Types 3, 4, 5 (acres)	- 11

Table 2-  
Pool 8 Dredging Volumes

Item	Cut 1		Cut 2		Cut 3		Cut 4		Cut 5	
	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT
Cut Name	Warren's Landing	Crosby Slough	Below Head of Raft Channel	Head of Raft Channel	Below Head of Raft Channel	Head of Raft Channel	Below Head of Raft Channel	Head of Raft Channel	Below Head of Raft Channel	Head of Raft Channel
1955 - 1974 average annual dredging volume	1,600	1,600	1,800	1,800	9,300	9,300	39,700	39,700	25,500	25,500
Bend width changes (percent)	—	—	—	—	—	—	—	—	—	—
Adjusted average annual volume	1,600	1,600	1,800	1,800	9,300	9,300	39,700	39,700	25,500	25,500
Change for 1986 - 2000 (percent)	-34	-19	-34	-19	-34	-19	-34	-19	-34	-19
Adjusted average annual volume	1,100	1,300	1,200	1,500	6,100	7,500	26,200	32,200	16,800	20,700
Total volume dredged, 1986 - 2000	16,500	19,500	18,000	22,500	91,500	112,500	393,000	483,000	252,000	310,500
Change for 2001 - 2025 (percent)	-37	-36	-37	-36	-37	-36	-37	-36	-37	-36
Adjusted average annual volume	1,000	1,000	1,100	1,200	5,900	6,000	25,000	25,400	16,100	16,300
Total volume dredged, 2001 - 2025	25,000	25,000	27,500	30,000	147,500	150,000	625,000	635,000	402,500	407,500
Total volume dredged, 1986 - 2025	41,500	44,500	45,500	52,500	239,000	262,500	1,018,000	1,118,000	654,500	718,000
Frequency of dredging (percent)	5	5	5	5	15	15	50	50	55	55
Expected number of dredging jobs (1986 - 2025)	2	2	2	2	6	6	20	20	22	22
Average dredging volume per job	20,800	22,200	22,800	26,200	39,800	43,800	50,900	55,900	29,800	32,600

Note: All volumes in Cubic Yards

Table 2—(cont.)  
Pool 8—Dredging Volumes

Cut No.	Above Brownsville		Picayne Island		Root River		Sand Slough		Above and below LaCrosse R.R. Bridge	
	Cut 6 With GREAT	Cut 6 Without GREAT	Cut 7 With GREAT	Cut 7 Without GREAT	Cut 8 With GREAT	Cut 8 Without GREAT	Cut 9 With GREAT	Cut 9 Without GREAT	Cut 10 With GREAT	Cut 10 Without GREAT
1955 - 1974 average annual dredging volume	39,200	39,200	8,200	8,200	4,400	4,400	12,800	12,800	9,500	9,500
Bend width changes (percent)	-10	—	—	—	—	—	-48	—	—	—
Adjusted average annual volume	35,300	39,200	8,200	8,200	4,400	4,400	6,700	12,800	9,500	9,500
Change for 1986 - 2000 (percent)	-34	-19	-34	-19	-34	-19	-34	-19	-24 (1)	-9 (1)
Adjusted average annual volume	23,300	31,800	5,400	6,600	2,900	3,600	4,400	10,400	7,200	8,600
Total volume dredged, 1986 - 2000	349,500	477,000	81,000	99,000	43,500	54,000	66,000	156,000	108,000	129,000
Change for 2001 - 2025 (percent)	-37	-36	-37	-36	-37	-36	-37	-36	-27 (1)	-26 (1)
Adjusted average annual volume	22,200	25,100	5,200	5,200	2,800	2,800	4,200	8,200	6,900	7,000
Total volume dredged, 2001 - 2025	555,000	627,500	130,000	130,000	70,000	70,000	105,000	205,000	172,500	175,000
Total volume dredged, 1986 - 2025	904,500	1,104,500	211,000	229,000	113,500	124,000	171,000	361,000	280,500	304,000
Frequency of dredging (percent)	60	60	15	15	10	10	20	20	25	25
Expected number of dredging jobs (1986 - 2025)	24	24	6	6	4	4	8	8	10	10
Average dredging volume per job	37,700	46,000	35,200	38,200	28,400	31,000	21,400	45,100	28,000	30,400

Note: All volumes in Cubic Yards

(1) Cut in approach to rigid structure.

DREDGED MATERIAL PLACEMENT SITE  
EXISTING CONDITIONS DESCRIPTION

POOL: 8  
CUT: 1  
SITE: 8.22

SITE: 8.22

Page 1 of 3

CUT LOCATION: 683.5 - 683.8 (Warner's Landing)

PLACEMENT SITE LOCATION: RM 685.5

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980): 640'  
100-year flood: 639'  
5-year flood: 633.25'  
Flat pool: 630.35'

FLOOD STAGE FACTORS:

Site within floodplain: No  
Site within floodway (effective flow area): No  
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100  
% Wetland: 0  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Less than 200 ft.  
Wetland: 500 ft.  
Residence: Less than 100 ft.  
Beneficial Use Site: 0'  
Other:

VEGETATION CHARACTER: Site is on agricultural land with road access.

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Upland game birds, furbearers, waterfowl feeding

Socioeconomic: Site is farmed field (Minimal agriculture land).

Adjacent land use: Agriculture, residential, rail line, navigation channel.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 1  
SITE: 8.22

Page 2 of 3

SITE: 8.22

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 100,000  
Area at base (acres): 4  
Height (feet): 15  
Length (feet): 450  
Width (feet): 400  
Side slope (ratio): N/A  
Final elevation (feet): 640 with beneficial use

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 2/40  
Volume dredged per job (cubic yards): 20,800  
Beneficial use demand (cubic yards): 468,500  
Beneficial Use by: Vernon County, Wis. DOT, Stoddard, Bergen Twp  
Other cuts using sites: 2

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand  
Silt (%):  
Other (%):  
Contaminants: None  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None  
Revegetation: None  
Other: None - Site not prone to flood flows.  
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 1  
SITE: 8.22

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.22

SPECIAL CONDITIONS FOR SITE USE: Avoid Known Cultural Resources

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	4	agricultural land
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

Warner's Landing  
POOL: 8  
CUT: 1  
SITE: 8.22

CHANNEL MAINTENANCE PLAN COSTS  
 PER DREDGING JOB

Frequency: 5%  
 /40 yrs  
 Volume per job: 20,800 cy

	PIPELINE	TYPES OF DRFT.ES			
		20 inch	16 inch	12 inch	MECHANICAL
		350 H.P.	350 H.P.	700 H.P.	350 H.P.
Basic Dredging Operation	\$439,300*	\$243,000*	\$224,000*	\$ 97,000*	\$ 92,000*
Berming Costs	9,000*	5,000*	6,000*	0	0
Diking Costs	8,000	7,000	4,000	0	0
Riprapping Costs	0	0	0	0	0
Seasonal Removal	0	0	0	0	0
Special Construction	0	0	0	0	0
Land Acquisition	76,000	76,000	76,000	76,000	76,000
Total of GREAT recommended Actions	448,000	248,000	230,000	97,000	92,000
Average Annual Costs	22,400	12,400	11,500	4,900	4,600

\*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE  
EXISTING CONDITIONS DESCRIPTION

POOL: 8  
CUT: 2  
SITE: 8.22

SITE: 8.22

Page 1 of 3

CUT LOCATION: 684.7 - 685.2 (Crosby Slough)

PLACEMENT SITE LOCATION: RM 685.5

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980): 640'  
100-year flood: 639'  
5-year flood: 633.25'  
Flat pool: 630.35'

FLOOD STAGE FACTORS:

Site within floodplain: No  
Site within floodway (effective flow area): No  
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100  
% Wetland: 0  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Less than 200 ft.  
Wetland: 500 ft.  
Residence: Less than 100 ft.  
Beneficial Use Site: 0'  
Other: None

VEGETATION CHARACTER: Site is on agricultural land with road access.

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Upland game birds, furbearers, waterfowl feeding.

Socioeconomic: Site is farmed field (minimal agriculture land).

Adjacent land use: Residential, rail line, navigation channel.

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 2  
SITE: 8.22

SITE: 8.22

Page 2 of 3

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 100,000  
Area at base (acres): 4  
Height (feet): 15  
Length (feet): 450  
Width (feet): 400  
Side slope (ratio): N/A  
Final elevation (feet): 640 with beneficial use

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 2/40  
Volume dredged per job (cubic yards): 22,800  
Beneficial use demand (cubic yards): 468,500  
Beneficial Use by: Vernon County, Wis. DOT, Stoddard, Bergen Twp  
Other cuts using sites: 1

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand  
Silt (%):  
Other (%):  
Contaminants: None  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None  
Revegetation: None  
Other: None - Site not prone to flood flows.  
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 2  
SITE: 8.22

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.22

SPECIAL CONDITIONS FOR SITE USE: Avoid known Cultural Resources

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	4	
Endangered Species habitat lost:	0	Agricultural land
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

Crosby Slough  
POOL: 8  
CUT: 2  
SITE: 8.22

Frequency: 5%  
               /40 yrs  
 Volume per job: 22,800 cy

CHANNEL MAINTENANCE PLAN COSTS  
 PER DREDGING JOB

	TYPES OF DREDGES						
	PIPELINE		MECHANICAL				
	20 Inch	16 inch	12 inch	Backhoe	350 H.P.	700 H.P.	
Basic Dredging Operation	\$172,000*	\$215,000*	\$258,000*	\$ 90,000*	\$ 97,000*	\$117,000*	\$113,000*
Berming Costs	5,000*	8,000*	10,000*	0	0	0	0
Diking Costs	7,000	6,000	5,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	76,000	76,000	76,000	76,000	76,000	76,000	76,000
Total of GREAT recommended Actions	177,000	223,000	268,000	90,000	97,000	117,000	113,000
Average Annual Costs	8,900	11,200	13,400	4,500	4,900	5,900	5,700

\*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 3  
SITE: 8.30

SITE: 8.30

Page 1 of 3

CUT LOCATION: 686.6 - 687.5 (Below Head of Raft Channel)

PLACEMENT SITE LOCATION: RM 688.5

TYPE OF PLACEMENT SITE: Permanent  Temporary \_\_\_\_\_

ELEVATIONS AT SITE:

Site (1980): 665'  
100-year flood: 639.25'  
5-year flood: 634'  
Flat pool: 630.55'

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): Yes  
Site below ordinary high water mark: Partially

SITE CHARACTER:

% Upland: 40  
% Wetland: 60  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: Adjacent  
Residence: Less than 200 ft.  
Beneficial Use Site: 0'  
Other: Side channels & wing dams immediately downstream.

VEGETATION CHARACTER:

SITE OWNER: FWS (leased to Houston Co., and sub-leased to private parties)

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Known waterfowl nesting and feeding area, furbearers,  
fish spawning  
Socioeconomic: Site of Sandbar Marina, some camping on upstream area/  
recreation use.  
Adjacent land use: Navigation channel, railroad, state highway.

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 3  
SITE: 8.30

Page 2 of 3

SITE: 8.30

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 2,500,000  
Area at base (acres): 55  
Height (feet): 30  
Length (feet): 1,900  
Width (feet): 1,250  
Side slope (ratio): 4:1  
Final elevation (feet): 695

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 6/40  
Volume dredged per job (cubic yards): 39,800  
Beneficial use demand (cubic yards): 645,000  
Beneficial Use by: MN DOT, Houston County, Hokah Township, Brownsville  
Other cuts using sites: 4, 5

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 95  
Silt (%): 5  
Other (%):  
Contaminants: None  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): Yes

EROSION CONTROL NEEDED:

Riprap: Yes  
Revegetation: None  
Other: None

Areas and features protected by erosion control: Downstream wing dams, riprap, and backwaters.

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 3  
SITE: 8.30

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.30

SPECIAL CONDITIONS FOR SITE USE: Ripraping banks and periodic beneficial use removal necessary to make site acceptable.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	11	III & IV
	22	1
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	22	Existing Placement site
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

**Below Head of Raft Channel**

<u>POOL:</u>	8
<u>CUT:</u>	3
<u>SITE:</u>	8.30

**Frequency: 15%**  
**/40 yrs**  
**Volume per Job: 39,000 cu**

**CHANNEL MAINTENANCE PLAN COSTS**  
**PER DREDGING JOB**

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe	Clamshell		
				350 H.P.	700 H.P.	350 H.P.	
						700 H.P.	
<b>Basic Dredging Operation</b>	\$381,000*	\$405,000*	\$393,000*	\$174,000*	\$167,000*	\$199,000	\$215,000*
<b>18 Berthing Costs</b>	7,000*	8,000*	10,000*	0	0	0	0
<b>Diking Costs</b>	8,000	7,000	7,000	0	0	0	0
<b>Riprapping Costs</b>	39,000*	39,000*	39,000*	39,000*	39,000*	39,000*	39,000*
<b>Seasonal Removal</b>	0	0	0	0	0	0	0
<b>Special Construction</b>	0	0	0	0	0	0	0
<b>Land Acquisition</b>	0	0	0	0	0	0	0
<b>Total of GREAT recommended Actions</b>	427,000	452,000	442,000	213,000	206,000	238,000	254,000
<b>Average Annual Costs</b>	64,100	67,800	32,000	32,000	30,900	35,700	38,100

\*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 4  
SITE: 8.30

EXISTING CONDITIONS DESCRIPTION

SITE: 8.30

Page 1 of 3

CUT LOCATION: 687.5 - 688.6 (Head of Raft Channel)

PLACEMENT SITE LOCATION: RM 688.5

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980):	665'
100-year flood:	639.25'
5-year flood:	634'
Flat pool:	630.55'

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): Yes  
Site below ordinary high water mark: Partially

SITE CHARACTER:

% Upland: 40  
% Wetland: 60  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: Adjacent  
Residence: Less than 200 ft.  
Beneficial Use Site: 0'  
Other: Side channels & wing dams immediately downstream.

VEGETATION CHARACTER:

SITE OWNER: FWS (leased to Houston Co., and sub-leased to private parties).

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown.  
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Known waterfowl nesting and feeding area, furbearers, fish spawning.  
Socioeconomic: Site of Sandbar Marina, some camping on upstream area/recreation use.  
Adjacent land use: Navigation channel, railroad, state highway.

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 4  
SITE: 8.30

Page 2 of 3

SITE: 8.30

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	2,500,000
Area at base (acres):	55
Height (feet):	30
Length (feet):	1,900
Width (feet):	1,250
Side slope (ratio):	4:1
Final elevation (feet):	695

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged:	20/40
Volume dredged per job (cubic yards):	50,900
Beneficial use demand (cubic yards):	645,000
Beneficial Use by:	MN DOT, Houston County, Hokah Township, Brownsville
Other cuts using sites:	3, 5

DREDGED MATERIAL CHARACTERISTICS:

Sand (%):	100 fine sand
Silt (%):	
Other (%):	
Contaminants:	None
Contaminant Source:	

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry):	X
Hydraulic (in slurry):	X

EROSION CONTROL NEEDED:

Riprap:	Yes
Revegetation:	None
Other:	None
Areas and features protected by erosion control:	Downstream wing dams, riprap, and backwaters.

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 4  
SITE: 8.30

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.30

SPECIAL CONDITIONS FOR SITE USE: Ripraping banks and periodic beneficial use removal necessary to make site acceptable.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	11	III & IV
	22	I
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	22	Existing Placement site
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

**Head of Raft Channel**  
**POOL:** 8  
**CUT:** 4  
**SITE:** 8.30

**Frequency:** 50%  
                   /40 yrs  
**Volume per Job:** 50,000 cu

**CHANNEL MAINTENANCE PLAN COSTS**  
                   PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe	350 H.P.	700 H.P.
<b>Basic Dredging Operation</b>	\$487,000*	\$429,000*	\$504,000*	\$185,000*	\$207,000*	\$238,000*
Berming Costs	10,000*	13,000*	12,000*	0	0	0
Diking Costs	9,000	8,000	8,000	0	0	0
Riprapping Costs	39,000*	39,000*	39,000*	39,000*	39,000*	39,000*
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
<b>Total of GREAT recommended Actions</b>	<b>536,000</b>	<b>481,000</b>	<b>555,000</b>	<b>224,000</b>	<b>246,000</b>	<b>277,000</b>
<b>Average Annual Costs</b>	<b>268,000</b>	<b>240,500</b>	<b>277,500</b>	<b>112,000</b>	<b>123,000</b>	<b>138,500</b>

\*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 5  
SITE: 8.30

EXISTING CONDITIONS DESCRIPTION

SITE: 8.30

Page 1 of 3

CUT LOCATION: 688.7 - 689.4 (Brownsville)

PLACEMENT SITE LOCATION: RM 688.5

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980):	665'
100-year flood:	639.25'
5-year flood:	634'
Flat pool:	630.55'

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): Yes  
Site below ordinary high water mark: Partially

SITE CHARACTER:

% Upland: 40  
% Wetland: 60  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: Adjacent  
Residence: Less than 200 ft.  
Beneficial Use Site: 0'  
Other: Side channel & wing dams immediately downstream.

VEGETATION CHARACTER:

SITE OWNER: FWS (leased to Houston Co. and sub-leased to private parties)

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Known waterfowl nesting and feeding area,  
furbearers, fish spawning  
Socioeconomic: Site of Sandbar Marina, some camping on upstream area/  
recreation use.  
Adjacent land use: Navigation channel, railroad, state highway.

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 5  
SITE: 8.30

Page 2 of 3

SITE: 8.30

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 2,500,000  
Area at base (acres): 55  
Height (feet): 30  
Length (feet): 1,900  
Width (feet): 1,250  
Side slope (ratio): 4:1  
Final elevation (feet): 695

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 22/40  
Volume dredged per job (cubic yards): 29,800  
Beneficial use demand (cubic yards): 645,000  
Beneficial Use by: MN DOT, Houston County, Hokah Township, Brownsville  
Other cuts using sites: 3, 4

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 95  
Silt (%): 5  
Other (%):  
Contaminants: None  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes  
Revegetation: None  
Other: None

Areas and features protected by erosion control: Downstream wing dams, riprap, and backwaters.

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

POOL: 8  
CUT: 5  
SITE: 8.30

Page 3 of 3

SITE: 8.30

SPECIAL CONDITIONS FOR SITE USE: Ripraping banks and periodic beneficial use removal necessary to make site acceptable.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	11	III & IV
	22	I
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	22	existing placement site
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

Brownsville  
POOL: 8  
CUT: 5  
SITE: 8.30

**Frequency:** 55%  
*/40 yrs*  
**Volume per job:** 29,800 cy

CHANNEL MAINTENANCE PLAN COSTS  
 PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE		MECHANICAL		CLAMSHELL	
	20 inch	16 inch	12 inch	Backhoe	350 H.P.	350 H.P.
<b>Basic Dredging Operation</b>	\$178,000*	\$211,000*	\$238,000*	\$115,000*	\$125,000*	\$149,000*
Berming Costs	5,000*	8,000*	9,000*	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0
Riprapping Costs	39,000*	39,000*	39,000*	39,000*	39,000*	39,000*
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
<b>Total of GREAT recommended Actions</b>	222,000	258,000	286,000	154,000	164,000	188,000
<b>Average Annual Costs</b>	122,100	141,900	157,300	84,700	90,200	103,400

\*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 6  
SITE: 8.06

EXISTING CONDITIONS DESCRIPTION

SITE: 8.06

Page 1 of 3

CUT LOCATION: 689.9 - 690.8 (Above Brownsville)

PLACEMENT SITE LOCATION: RM 696

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980):	656'
100-year flood:	643.5'
5-year flood:	638'
Flat pool:	631'

FLOOD STAGE FACTORS:

Site within floodplain: No  
Site within floodway (effective flow area): No  
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100  
% Wetland: 0  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: 1,000 ft.  
Residence: Less than 1,000'  
Beneficial Use Site: 0'  
Other:

VEGETATION CHARACTER: Area is on island and is old landfill site.

SITE OWNER: City of La Crosse

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Industrial development, sewage plant, marine

Adjacent land use: Marina, sewage plant, industrial park

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 6  
SITE: 8.06

Page 2 of 3

SITE: 8.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS: 2,500,000

Volume capacity (cubic yards): 2,500,000  
Area at base (acres): 44  
Height (feet): 35  
Length (feet): 2,300  
Width (feet): 850  
Side slope (ratio): 4:1  
Final elevation (feet): 691

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 24/40  
Volume dredged per job (cubic yards): 37,700  
Beneficial use demand (cubic yards): 2,082,500  
Beneficial Use by: LaCrosse County & City, Shelby, WI DOT  
Other cuts using sites: 7,8,9,10; Pool 7; 2; Pool 9;4,5,6,7,8,9,10

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand  
Silt (%):  
Other (%):  
Contaminants: None  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None  
Revegetation: None  
Other: None  
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 6  
SITE: 8.06

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.06

SPECIAL CONDITIONS FOR SITE USE: Mechanical unloading required

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	44	existing fill
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

Above Brownsville  
 POOL: 8  
 CUT: 6  
 SITE: 8.06

CHANNEL MAINTENANCE PLAN COSTS  
 PER DREDGING JOB

Frequency: 60X /40 yrs  
 Volume per job: 37,700 cu

PIPELINE	TYPES OF DREDGES					
				MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe	350 H.P.	700 H.P.
Basic Dredging Operation	\$ 417,000*	\$ 448,000*	\$ 472,000*	\$ 207,000*	\$ 228,000*	\$ 210,000*
Berming Costs (1)	6,000*	8,000*	10,000*	0	0	0
Diking Costs	8,000	7,000	7,000	0	0	0
Riprappling Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	423,000	456,000	482,000	207,000	228,000	210,000
Average Annual Costs	253,800	273,600	289,200	124,200	136,800	126,000

\*GREAT recommended actions

(1) At Site 8.17.

DREDGED MATERIAL PLACEMENT SITE  
EXISTING CONDITIONS DESCRIPTION

POOL: 8  
CUT: 6  
SITE: 8.17LB

SITE: 8.17 LB

Page 1 of 3

CUT LOCATION: 689.9 - 690.8 (Above Brownsville)

PLACEMENT SITE LOCATION: 690.3

TYPE OF PLACEMENT SITE: Permanent \_\_\_\_\_ Temporary X

ELEVATIONS AT SITE:

Site (1980):	est. 655
100-year flood:	640.3
5-year flood:	634.4
Flat pool:	631.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): Yes  
Site below ordinary high water mark: Partially

SITE CHARACTER:

% Upland: 100 (old dredged material placement site)  
% Wetland: (previously 100% Type 1 and 3 wetlands)  
% Open water:

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: Adjacent  
Residence: 2,500 ft.  
Beneficial Use Site: 8,000 ft.  
Other:

VEGETATION CHARACTER: Open sand, some willow and grasses

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: Adjacent to mussel habitat  
Historical or archeological value: Unknown  
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Turtle nesting habitat  
Socioeconomic: Dredged material containment site  
Adjacent land use: Main channel, backwaters

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 6  
SITE: 8.17 LB

Page 2 of 3

SITE: 8.17 LB

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 192,000  
Area at base (acres): 8.5  
Height (feet):  
Length (feet): (containment site)  
Width (feet):  
Side slope (ratio):  
Final elevation (feet): 655 (site periodically emptied)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 24/40  
Volume dredged per job (cubic yards): 37,700  
Beneficial use demand (cubic yards): 0  
Beneficial Use by: N/A  
Other cuts using sites: None

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100  
Silt (%):  
Other (%):  
Contaminants:  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes  
Revegetation: Yes  
Other:  
Areas and features protected by erosion control: Adjacent and downstream wetlands and downstream wingdams.

DREDGED MATERIAL PLACEMENT SITE

POOL: 8

CUT: 6

SITE: 8.17 LB

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.17 LB

SPECIAL CONDITIONS FOR SITE USE: Site must be periodically emptied and the perimeter protected from erosion.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	8.5	previous placement site
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:

Historical/Archeological sites were not found:

Historical/Archeological survey not made:

#### Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE  
EXISTING CONDITIONS DESCRIPTION

POOL: 8  
CUT: 7  
SITE: 8.06

SITE: 8.06

Page 1 of 3

CUT LOCATION: 691.4 - 691.8 (Picayne Island)

PLACEMENT SITE LOCATION: RM 696

TYPE OF PLACEMENT SITE: Permanent  Temporary \_\_\_\_\_

ELEVATIONS AT SITE:

Site (1980): 656'  
100-year flood: 643.5'  
5-year flood: 638  
Flat pool: 631

FLOOD STAGE FACTORS:

Site within floodplain: No  
Site within floodway (effective flow area): No  
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100  
% Wetland: 0  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: 1,000 ft.  
Residence: Less than 1,000'  
Beneficial Use Site: 0'  
Other:

VEGETATION CHARACTER: Area is on island and is old landfill site.

SITE OWNER: City of La Crosse

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Industrial development, sewage plant, marina

Adjacent land use: Navigation channel, marina, sewage plant, industrial park

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 7  
SITE: 8.06

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

Page 2 of 3

SITE: 8.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 2,500,000  
Area at base (acres): 44  
Height (feet): 35  
Length (feet): 2,300  
Width (feet): 850  
Side slope (ratio): 4:1  
Final elevation (feet): 691

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 6/40  
Volume dredged per job (cubic yards): 35,200  
Beneficial use demand (cubic yards): 2,082,500  
Beneficial Use by: La Crosse City & County, Shelby, WI DOT  
Other cuts using sites: 6, 8, 9, 10, Pool 7;2;Pool 9; 4,5,7,8,9,10

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand  
Silt (%):  
Other (%):  
Contaminants: None  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None  
Revegetation: None  
Other: None  
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 7  
SITE: 8.06

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

(Continued from previous page)

Page 3 of 3

SITE: 8.06

SPECIAL CONDITIONS FOR SITE USE: Mechanical Unloading Required

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	44	existing fill
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

**Picayane Island**

<u>POOL:</u>	8
<u>CUT:</u>	7
<u>SITE:</u>	8.06

Frequency: 15% /40 yrs  
Volume per job: 35,200 cu

**CHANNEL MAINTENANCE PLAN COSTS**  
**PER DREDGING JOB**

	TYPES OF DREDGES					
	<u>PIPELINE</u>				MECHANICAL	
		<u>20 inch</u>	<u>16 inch</u>	<u>12 inch</u>	<u>Backhoe</u>	<u>Clamshell</u>
					<u>350 H.P.</u>	<u>700 H.P.</u>
<b>Basic Dredging Operation</b>	\$341,000*	\$361,000*	\$346,000*	\$169,000*	\$174,000*	\$185,000*
Berming Costs	5,000*	6,000*	7,000*	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
<b>Total of GREAT recommended Actions</b>	<b>346,000</b>	<b>367,000</b>	<b>353,000</b>	<b>169,000</b>	<b>174,000</b>	<b>185,000</b>
<b>Average Annual Costs</b>	<b>51,900</b>	<b>55,100</b>	<b>53,000</b>	<b>25,400</b>	<b>26,100</b>	<b>27,800</b>
						<b>28,200</b>

\*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 8  
SITE: 8.06

EXISTING CONDITIONS DESCRIPTION

SITE: 8.06

Page 1 of 3

CUT LOCATION: 692.2 - 693.3 (Root River)

PLACEMENT SITE LOCATION: RM 696

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980):	656
100-year flood:	643.5'
5-year flood:	638
Flat pool:	631

FLOOD STAGE FACTORS:

Site within floodplain: No  
Site within floodway (effective flow area): No  
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100  
% Wetland: 0  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: 1,000 ft.  
Residence: Less than 1,000'  
Beneficial Use Site: 0'  
Other:

VEGETATION CHARACTER: Area is on island and is old landfill site.

SITE OWNER: City of La Crosse

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Industrial development, sewage plant, marina

Adjacent land use: Marina, sewage plant, industrial park

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 8  
SITE: 8.06

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

Page 2 of 3

SITE: 8.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	2,500,000
Area at base (acres):	44
Height (feet):	35
Length (feet):	2,300
Width (feet):	850
Side slope (ratio):	4:1
Final elevation (feet):	691

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 4/40  
Volume dredged per job (cubic yards): 28,400  
Beneficial use demand (cubic yards): 2,082,500  
Beneficial Use by: La Crosse City and County, Shelby, WI DOT  
Other cuts using sites: 6, 7, 9, 10; Pool 7: 2; Pool 9: 4,5,7,8,9,10

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand  
Silt (%):  
Other (%):  
Contaminants: None  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None  
Revegetation: None  
Other: None  
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

POOL: 8

CUT: 8

SITE: 8.06

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.06

SPECIAL CONDITIONS FOR SITE USE: Mechanical Unloading required

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	44	existing fill
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 9  
SITE: 8.06

EXISTING CONDITIONS DESCRIPTION

SITE: 8.06

Page 1 of 3

CUT LOCATION: 694.3 - 695.0 (Sand Slough)

PLACEMENT SITE LOCATION: RM 696

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980):	656
100-year flood:	643.5'
5-year flood:	638
Flat pool:	631

FLOOD STAGE FACTORS:

Site within floodplain:	No
Site within floodway (effective flow area):	No
Site below ordinary high water mark:	No

SITE CHARACTER:

% Upland:	100
% Wetland:	0
% Open water:	0

DISTANCE FROM SITE TO:

Open Water:	Adjacent
Wetland:	1,000 ft.
Residence:	Less than 1,000'
Beneficial Use Site:	0'
Other:	

VEGETATION CHARACTER: Area is on island and is old landfill site.

SITE OWNER: City of La Crosse

SPECIAL CONCERNS:

Endangered species habitat:	None
Historical or archeological value:	Unknown
Other:	None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Industrial development, sewage plant, marina

Adjacent land use: Navigation channel, marina, sewage plant, industrial park

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 9  
SITE: 8.06

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.06

SPECIAL CONDITIONS FOR SITE USE: Mechanical Unloading required

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	44	existing fill
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

## CHANNEL MAINTENANCE PLAN COSTS PER DREDGING JOB

Sand Slough  
POOL: 8  
CUT: 9  
SITE: 8.06

Frequency: 20% /40 yrs  
Volume per job: 21,400 cy

	TYPES OF DREDGES						
	PIPELINE		MECHANICAL		Clamshell		
	20 Inch	16 Inch	12 Inch	Backhoe	350 H.P.	700 H.P.	
Basic Dredging Operation	\$258,000*	\$293,000*	\$334,000*	\$101,000*	\$ 96,000*	\$117,000*	\$128,000*
Berming Costs (1)	5,000*	7,000*	9,000*	0	0	0	0
Diking Costs	7,000	6,000	5,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	263,000	300,000	343,000	101,000	96,000	117,000	128,000
Average Annual Costs	52,600	60,000	68,600	20,200	19,200	23,4000	25,600

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 10  
SITE: 8.28

SITE: 8.28

Page 1 of 3

CUT LOCATION: 699.6 - 700.4 (Above and Below LaCrosse Railroad Bridge)

PLACEMENT SITE LOCATION: RM 700

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980): 635'  
100-year flood: 646'  
5-year flood: 640'  
Flat pool: 631'

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): Yes  
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0  
% Wetland: 100  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: 0'  
Residence: Fill for residential development  
Beneficial Use Site: 0'\*  
Other: \*Numerous buildings exist on site and material has been requested  
for fill around foundations; bridge crosses site.

VEGETATION CHARACTER: A previously used site, 4 acres of previously disturbed  
Type 1 wetlands would be destroyed.

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Furbearers, passerine birds

Socioeconomic: Recreation, residential development

Adjacent land use: Residential, navigation channel, wetland

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 10  
SITE: 8.28

Page 2 of 3

SITE: 8.28

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	33,000
Area at base (acres):	4
Height (feet):	5
Length (feet):	1,200
Width (feet):	150
Side slope (ratio):	4:1
Final elevation (feet):	650

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged:	10/40
Volume dredged per job (cubic yards):	28,000
Beneficial use demand (cubic yards):	626,000
Beneficial Use by:	
Other cuts using sites:	None LaCresent, Houston Co. MN DOT

DREDGED MATERIAL CHARACTERISTICS:

Sand (%):	100 medium sand
Silt (%):	
Other (%):	
Contaminants:	None
Contaminant Source:	

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry):	X
Hydraulic (in slurry):	X

EROSION CONTROL NEEDED:

Riprap:	None
Revegetation:	Yes
Other:	None

Areas and features protected by erosion control: Adjacent wetlands and downstream wing dams.

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 10  
SITE: 8.28

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

Page 3 of 3

SITE: 8.28

SPECIAL CONDITIONS FOR SITE USE:

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	4	1
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

**La Crosse RR Bridge**

<b>POOL:</b>	<b>8</b>
<b>CUT:</b>	<b>10</b>
<b>SITE:</b>	<b>8.28</b>

**Frequency:** 25%  
/40 yrs  
**Volume per Job:** 28,000 cy

**CHANNEL MAINTENANCE PLAN COSTS**  
**PER DREDGING JOB**

	TYPES OF DREDGES					
	<b>Pipeline</b>	<b>Mechanical</b>				
		<b>20 inch</b>	<b>16 inch</b>	<b>12 inch</b>	<b>Backhoe</b>	<b>Clamsshell</b>
				<b>350 H.P.</b>	<b>700 H.P.</b>	<b>350 H.P.</b>
<b>Basic Dredging Operation</b>	\$122,000*	\$129,000*	\$116,000*	\$102,000*	\$116,000*	\$131,000*
Berming Costs	4,000	5,000	5,000	0	0	0
Diking Costs	7,000	7,000	5,000	0	0	0
Riprapping Costs	256,000	256,000	256,000	256,000	256,000	256,000
Seasonal Removal	0	0	0	0	0	0
Special Construction (1)	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*
Land Acquisition	13,000	13,000	13,000	13,000	13,000	13,000
<b>Total of GREAT recommended Actions</b>	127,000	134,000	121,000	107,000	121,1000	136,000
<b>Average Annual Costs</b>	31,800	33,500	30,300	26,800	30,300	34,000

\*GREAT recommended actions

(1) Placement of material as fill near structures.

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 10  
SITE: 8.06

EXISTING CONDITIONS DESCRIPTION

SITE: 8.06

Page 1 of 3

CUT LOCATION: 699.3 - 700.4 (Above and Below LaCrosse Railroad Bridge)

PLACEMENT SITE LOCATION: RM 696

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980):	656
100-year flood:	643.5'
5-year flood:	638
Flat pool:	631

FLOOD STAGE FACTORS:

Site within floodplain:	No
Site within floodway (effective flow area):	No
Site below ordinary high water mark:	No

SITE CHARACTER:

% Upland:	100
% Wetland:	0
% Open water:	0

DISTANCE FROM SITE TO:

Open Water:	Adjacent
Wetland:	1,000 ft.
Residence:	Less than 1,000'
Beneficial Use Site:	0'
Other:	

VEGETATION CHARACTER: Area is on island and is old landfill site.

SITE OWNER: City of La Crosse

SPECIAL CONCERNS:

Endangered species habitat:	None
Historical or archeological value:	Unknown
Other:	None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Industrial development, sewage plant, marina

Adjacent land use: Navigation channel, marina, sewage plant and industrial park adjacent.

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 8  
CUT: 10  
SITE: 8.06

Page 2 of 3

SITE: 8.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 2,500,000  
Area at base (acres): 44  
Height (feet): 35  
Length (feet): 2,300  
Width (feet): 850  
Side slope (ratio): 4:1  
Final elevation (feet): 691

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10 40  
Volume dredged per job (cubic yards): ~8,000  
Beneficial use demand (cubic yards): 2,082,500  
Beneficial Use by: La Crosse City & County, Shelby, WI DOT  
Other cuts using sites: 6, 7, 8, 9; Pool 7: 2, Pool 9: 4,5,7,8,9,10

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand  
Silt (%):  
Other (%):  
Contaminants: None  
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None  
Revegetation: None  
Other: None  
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

POOL: 8  
CUT: 10  
SITE: 8.06

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

(Continued from previous page)

Page 3 of 3

SITE: 8.06

SPECIAL CONDITIONS FOR SITE USE: Mechanical Unloading Required

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	44	existing fill
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:

Historical/Archeological sites were not found:

Historical/Archeological survey not made:

**La Crosse RR Bridge**  
**POOL:** 8  
**CUT:** 10  
**SITE:** 8.06

**Frequency:** 25% /40 yrs  
**Volume per Job:** 28,000 cy

CHANNEL MAINTENANCE PLAN COSTS  
 PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 Inch	16 Inch	12 Inch	Backhoe	350 H.P.	Clamshell 350 H.P.
<b>Basic Dredging Operation (1)</b>	\$276,000	\$287,000	\$271,000	\$124,000*	\$127,000*	\$154,000*
Berming Costs	4,000	5,000	5,000	0	0	0
Diking Costs	7,000	7,000	5,000	0	0	0
Riprapping Costs	17,000	17,000	17,000	17,000	17,000	17,000
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
<b>Total of GREAT recommended Actions</b>	-	-	-	124,000	127,000	154,000
<b>Average Annual Costs</b>	-	-	-	31,000	31,800	38,500
<b>GREAT recommended actions</b>						36,500

(1) No Rehandling.

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 1

Alternative Plan	Selected, RFFP	NED, MPFW/OG	EQ		
Placement Site No.	8.22	8.31	8.06		
Site Capacity (cy)	2,400,000	66,000	2,500,000		
Site Acreage	50	2.5	44		
Site Height (ft)	30	15	35		
Potential Beneficial use removal (cy)	468,500	-	2,082,500		
Conditions <sup>1</sup> favoring use of site	21 2 4 5 28 29 30 11 32 33 35 16	1 6 7 8 9 11 33 16	21 2 23 4 5 27 10 11 12 33 35 16		
Conditions <sup>1</sup> adverse to use of site	43 66 47 54	42 63 64 65 50 72 74 75	66 48 69 54		
<p>1 Code numbers in columns represent conditions listed on pages _____.</p>					

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 2

Alternative Plan	Selected, RFFP	NED	EQ		
Placement Site No.	822	801	806		
Site Capacity (cy)	2,400,000	167,000	2,500,000		
Site Acreage	50	10	44		
Site Height (ft)	30	10	35		
Potential Beneficial use removal (cy)	468,500	468,500	2,082,500		
Conditions <sup>1</sup> favoring use of site	21 2 4 5 28 29 30 11 32 33 35 16	1 4 5 26 27 28 29 11 32 33 14 15	21 2 23 4 5 7 10 12 33 35 16		
Conditions <sup>1</sup> adverse to use of site	43 46 47 54	42 3 50 56	66 48 69 54		

1 Code numbers in columns represent conditions listed on pages \_\_\_\_.

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 3

<b>Alternative Plan</b>	<b>Selected</b>	<b>NED, MPFW/OG</b>	<b>EQ</b>	<b>RFFP</b>
<b>Placement Site No.</b>	<b>8.30</b>	<b>8.20</b>	<b>8.06</b>	<b>8.22</b>
<b>Site Capacity (cy)</b>	<b>2,500,000</b>	<b>255,000</b>	<b>2,500,000</b>	<b>2,400,000</b>
<b>Site Acreage</b>	<b>55</b>	<b>7</b>	<b>44</b>	<b>50</b>
<b>Site Height (ft)</b>	<b>30</b>	<b>15</b>	<b>35</b>	<b>30</b>
<b>Potential Beneficial use removal (cy)</b>	<b>645,000</b>	<b>-</b>	<b>2,082,500</b>	<b>468,500</b>
<b>Conditions<sup>1</sup> favoring use of site</b>	1 4 5 7 29 11 33 15/35	1 26 7 8 9 11 33 54 16	21 2 23 4 5 27 10 11 12 33 35 16	21 2 4 5 30 11 32 33 35 16
<b>Conditions<sup>1</sup> adverse to use of site</b>	62 63 46 48 70 72 74 56	62 63 64 65 70 72 75	66 48 69 54	43 66 47 68 49 54

1 Code numbers in columns represent conditions listed on pages \_\_\_\_.

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 4

Alternative Plan	Selected, EQ	NED, MPF W/OG	RFFP		
Placement Site No.	8.30	8.02	8.22		
Site Capacity (cy)	2,500,000	614,000	2,400,000		
Site Acreage	55	15	50		
Site Height (ft)	30	25	30		
Potential Beneficial use removal (cy)	645,000	-	468,500		
Conditions <sup>1</sup> favoring use of site	1 4 5 7 29 11 33 15/35	1 4 5 6 7 11 29 11 33 15/35	21 2 4 5 30 11 32 33 35 16		
Conditions <sup>1</sup> adverse to use of site	62 63 46 48 70 72 74 56	62 63 70 72 74 56	43 66 47 68 49 54		

1 Code numbers in columns represent conditions listed on page       .

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 5

Alternative Plan	EQ, RFFF	Selected, NED	MPFW/OG	
Placement Site No.	8.06	8.30	8.02	
Site Capacity (cy)	2,500,000	2,500,000	614,000	
Site Acreage	44	55	15	
Site Height (ft)	35	30	25	
Potential Beneficial use removal (cy)	2,082,500	645,000	-	
Conditions <sup>1</sup> favoring use of site	21 2 23 4 5 27 10 11 12 33 35 16	1 4 5 26 7 8 29 11 33 15/35	1 4 5 6 7 8 29 11 33 15/35	
Conditions <sup>1</sup> adverse to use of site	66 48 69 54	62 63 70 72 74 56	62 63 70 72 74 56	

1 Code numbers in columns represent conditions listed on pages \_\_\_\_.

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 6

Alternative Plan	Selected, RFFP	EQ NED, MPFW/OG			
Placement Site No.	8.06	8.17 <sup>(2)</sup>			
Site Capacity (cy)	2,500,000	1,260,000			
Site Acreage	44	32			
Site Height (ft)	35	25			
Potential Beneficial use removal (cy)	2,082,000	-			
Conditions <sup>1</sup> favoring use of site	21 2 23 4 5 27 10 11 12 33 35 16	1 6 7 8 9 11 33 15 16			
Conditions <sup>1</sup> adverse to use of site	66 48 69 54	62 43 64 65 70 72 74 75			
(2) Temporary site					
1 Code numbers in columns represent conditions listed on page ____.					

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 7

Alternative Plan	Selected, NED EQ, RFFP	MPFW/OG			
Placement Site No.	8.06	8.16			
Site Capacity (cy)	2,500,000	226,000			
Site Acreage	44	9			
Site Height (ft)	35	15			
Potential Beneficial use removal (cy)	2,082,500	-			
Conditions <sup>1</sup> favoring use of site	21 2 23 4 5 27 10 11 12 33 35 16	1 26 7 8 9 11 32 16			
Conditions <sup>1</sup> adverse to use of site	66 48 69 54	62 43 64 65 70 72 53 54 75			

1 Code numbers in columns represent  
conditions listed on pages \_\_\_\_.

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 8

Alternative Plan	Selected, NED EQ, RFFF	MPFW/OG			
Placement Site No.	8.06	8.27			
Site Capacity (cy)	2,500,000	2,500,000			
Site Acreage	44	44			
Site Height (ft)	35	35			
Potential Beneficial use removal (cy)	2,082,500	-			
Conditions <sup>1</sup> favoring use of site	21 2 23 4 5 27 10 11 12 33 35 16	1 6 7 8 9 11 16			
Conditions <sup>1</sup> adverse to use of site	66 48 69 54	62 63 64 65 70 72 53 54 75			

<sup>1</sup> Code numbers in columns represent  
conditions listed on page \_\_\_\_.

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 9

Alternative Plan	Selected, NED EQ, RFFP	NED, MPFW/OG			
Placement Site No.	8.06	8.15			
Site Capacity (cy)	2,500,000	277,000			
Site Acreage	44	11.5			
Site Height (ft)	35	15			
Potential Beneficial use removal (cy)	2,086,000	-			
Conditions <sup>1</sup> favoring use of site	21 2 23 4 5 27 10 11 12 33 35 16	1 26 7 8 9 11 16			
Conditions <sup>1</sup> adverse to use of site	66 48 69 54	62 63 64 65 70 72 53 54 75			

1 Code numbers in columns represent  
conditions listed on pages \_\_\_\_.

**COMPARISON OF ALTERNATIVE PLAN SITES**

Pool 8 Cut 10

Alternative Plan	Selected, NED	Selected, NED EQ. RFFF	MPFW/OG		
Placement Site No.	8.28	8.06	8.07		
Site Capacity (cy)	50,000	2,500,000	350,000		
Site Acreage	15	44	15		
Site Height (ft)	15	35	15		
Potential Beneficial use removal (cy)	626,000	2,082,500	-		
Conditions <sup>1</sup> favoring use of site	21 4 5 26 27 28 29 30 11 32 15 16*	21 2 23 4 5 27 10 11 12 33 35 16	4 28 29 30 11 32 35 16		
Conditions <sup>1</sup> adverse to use of site	62 43 53	66 48 69 54	41 42 63 65 46 47 53 74		
*Site will be used till local residents have sufficient fill for development.					
1 Code numbers in columns represent conditions listed on page ____.					

#### Key to Conditions Used in Site Comparisons

1. Recreation enhancement
2. Remove from floodplain
3. Fish and wildlife enhancement
4. Beneficial use identified
5. Existing road access
6. Adjacent to cut
7. No land acquisition required
8. Provides flexibility of equipment
9. Least cost to dredge
10. No erosion potential
11. No special construction required
12. No diking of berthing
13. No water quality concerns
14. Aesthetic enhancement
15. Beneficial use on the site
16. Sufficient capacity on the site
  
21. No adverse impacts on recreation use
22. Potential for removal from floodplain
23. No adverse fish and wildlife impacts
24. Potential for identifying a beneficial user
25. Road access can be constructed
26. Within  $\frac{1}{2}$  mile of cut (easy reach of cutterhead dredges)
27. No apparent problem in acquiring land or easement
28. Slight limitation on equipment choice
29. Less costly than dredging to most other sites
30. Some erosion potential
31. (Unused)
32. Berthing required
33. No water quality concern expected
34. (Unused)
35. Know of area where material can be put to beneficial use
36. Sufficient capacity site but less impact if beneficial use demand is developed

- 41. Some adverse impacts on recreation use
- 42. In floodplain - no effect on flood flows
- 43. Some adverse impacts on fish and wildlife
- 44. No suspected beneficial user can be identified
- 45. Poor access to the site
- 46. Within 2 miles of cut (barely within reach of hydraulic dredges)
- 47. Land or easement acquisition required
- 48. Equipment choice limited to just a few options
- 49. More costly than dredging to most of the other sites
- 50. Severe erosion potential
- 51. (Unused)
- 52. Diking required
- 53. Suspected water quality concerns
- 54. Some aesthetic problems
- 55. Potential market for beneficial use suspected but not identified
- 56. Sufficient capacity on site with removal by identified users

- 61. Severe adverse impacts on recreation use
- 62. Placement would cause suspected constriction on flood flows
- 63. Severe adverse impacts on fish and wildlife
- 64. No potential for identifying beneficial user
- 65. No access to the site
- 66. Beyond 2 miles from cut (cannot be reached directly by cutterhead dredges)
- 67. Land or easement acquisition required but does not seem likely
- 68. Severe restrictions on choice of equipment
- 69. Most costly to dredge
- 70. Severe erosion potential with severe consequences if failure occurs
- 71. Special construction required to use the site
- 72. Berming or diking required with severe consequences if failure occurs
- 73. Known water quality concerns
- 74. Adverse aesthetic impacts
- 75. No potential market for beneficial use
- 76. Sufficient capacity on site only if potential beneficial use, not now identified, develops

# LEGEND

## RECOMMENDED CHANNEL MAINTENANCE PLAN

5 ————— Dredge cut number  
— ————— Location of dredge cut

 ————— Recommended placement site  
206 T ————— Site number  
3,4,5 ————— Dredge cuts for which site is used  
  
S = Special conditions on use  
T = Temporary use site  
  
Parentheses if site is used for placement of material from a cut in another pool

## ALTERNATIVE MATERIAL PLACEMENT PLANS

 ————— Alternative placement site  
4.09 ————— Site number

DREDGE CUT	POOL 8			
	MPFW/OG	NED	EQ	RFFP
1	8.31	8.31	8.06	8.22
2	8.01	8.01	8.06	8.22
3	8.20	8.20	8.06	8.22
4	8.02	8.02	8.30	8.22
5	8.02	8.30	8.06	8.06
6	8.17	8.17	8.06	8.06
7	8.16	8.06	8.06	8.06
8	8.27	8.06	8.06	8.06
9	8.15	8.15/8.06	8.06	8.06
10	8.07	8.28/8.06	8.06	8.06

M = Most probable future without GREAT

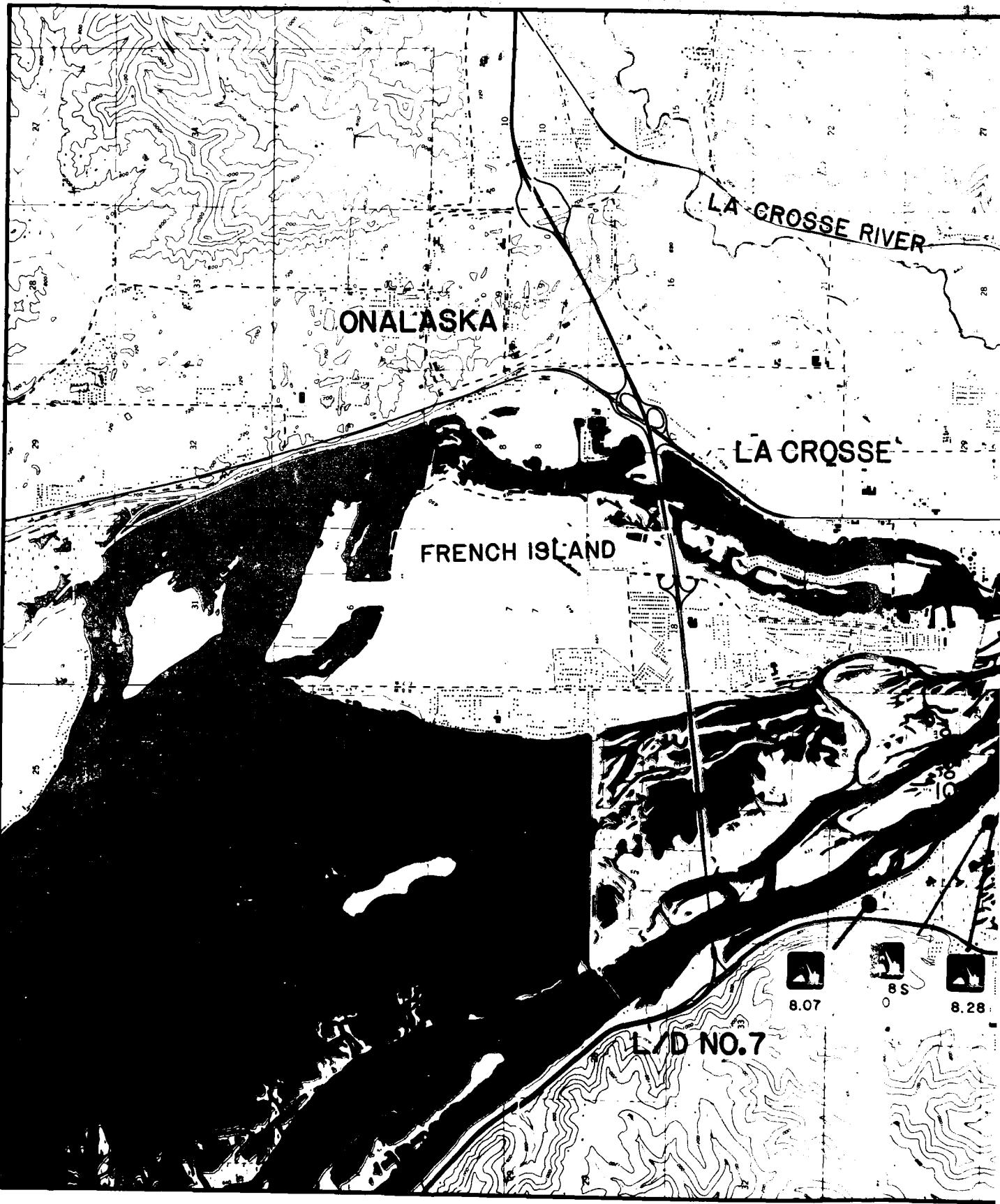
N = National economic development

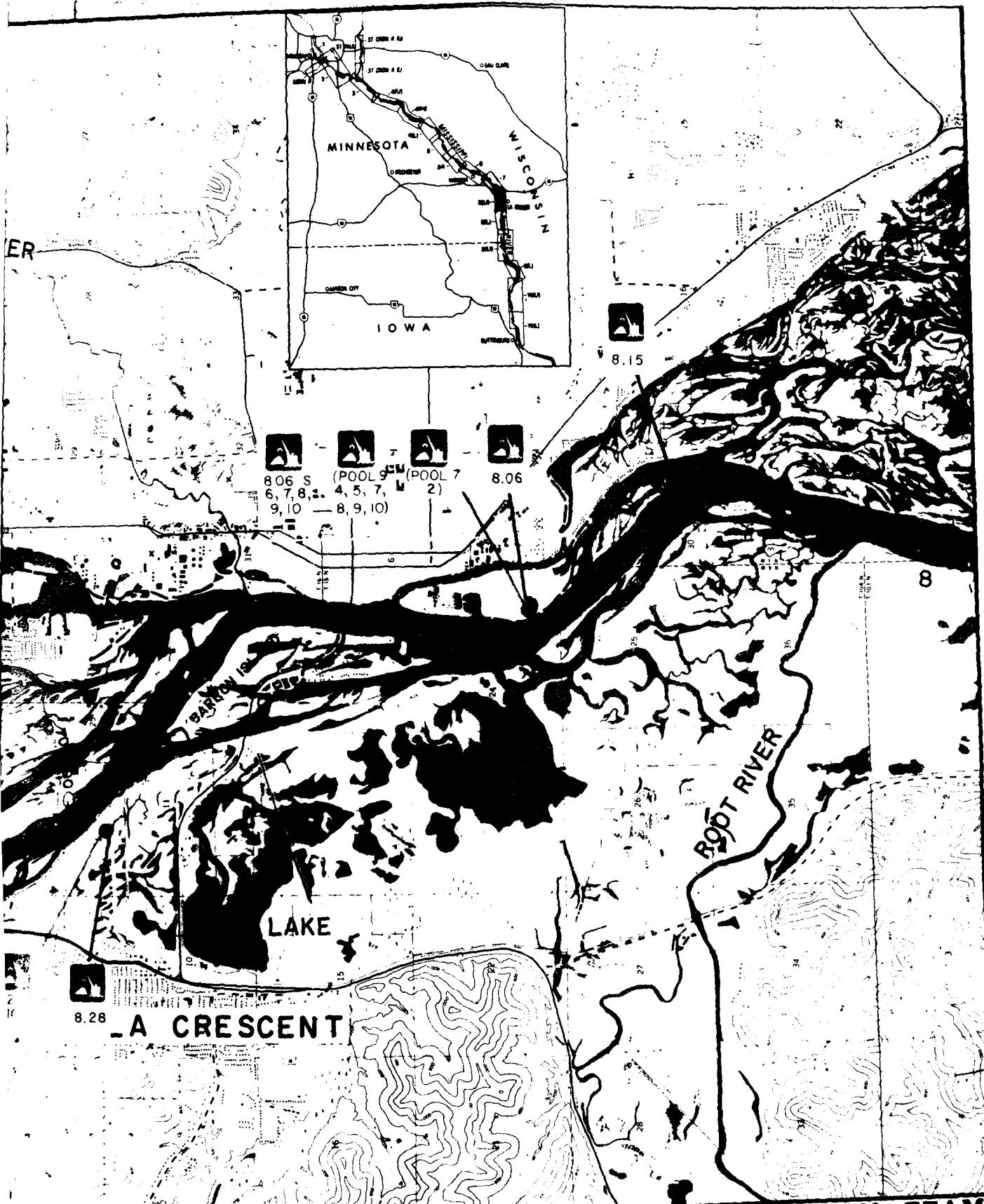
E = Environmental quality

R = Removal from floodplain

SCALE: 1"=4,000'

CONTOUR INTERVAL 20 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1988





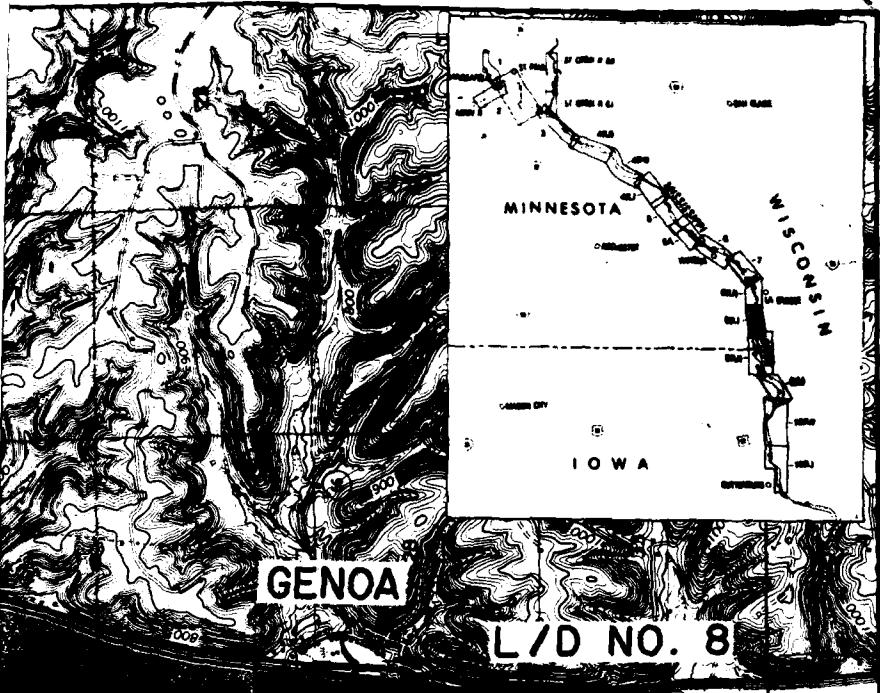
**GREAT RIVER ENVIRONMENTAL ACTION TEAM  
UPPER MISSISSIPPI RIVER  
(POOL 8(U)-MILE 693 TO MILE 704)**



--- FLOODWAY DESIGNATED BY LOCAL ORDINANCE



GREAT RIVER ENVIRONMENTAL ACTION  
UPPER MISSISSIPPI RIVER  
(POOL 8(L)-MILE 679 TO MILE 692)



GENOA

L/D NO. 8



RENOVATIONS

RIVER ENVIRONMENTAL ACTION TEAM  
UPPER MISSISSIPPI RIVER  
(POOL 8(L)-MILE 679 TO MILE 692)

3



**POOL 9**

## CHANNEL MAINTENANCE PLAN SUMMARY

POOL 9

Dredge Cut	MPTFC CY @ 1985-02/25	Selected Site	NED Site	EQ Site	RPTP Site	MPPNOC Site	MPNOC CY @ 1985-20/25	Temporary Site
1. Above Crooked Slough	52,000	9.47/9.41	9.34	9.41	9.41	9.34	56,500	-
2. Above Archafalays	49,500	9.47/9.26	9.47	9.47/9.42	9.42	9.35	124,000	-
3. Lansing Upper Light	469,000	9.26/9.47/ 9.03/9.28*	9.04	9.03/9.47/ 8.06	9.41	9.17	1,174,500	9.17
A. Indian Camp Light	517,000	9.07/8.06	9.18	9.06/8.06	9.23	9.18	568,500	9.18
5. DeSoto	101,500	9.07/8.06	9.36	9.08	9.23	9.36	110,500	-
6. Head of Battle Island	363,500	9.11/9.33	9.33	8.06	9.24	9.19/9.37	400,000	-
7. Below Twin Island	12,000	9.15/9.11/ 9.33/8.06	9.20	9.15	9.24	9.30	13,500	-
8. Twin Island	362,000	9.15/9.11/ 9.33/8.06	9.38	8.06	9.42	9.38	396,000	9.20
9. Island 126	302,000	9.15/9.11/ 9.33/8.06	9.21/9.39	9.15/8.06	9.43	9.21	462,000	9.21
10. Lower Approach to L/D 8	93,500	9.15/9.11/ 9.33/8.06	9.39	8.06	9.43	9.39	99,500	-
	2,322,000						3,405,000	

**69**

## SELECTED PLAN SUMMARY

Total Volume Dredged (cy) -	2,322,000
Beneficial Use (cy) Estimate from Selected Volume -	860,200
Total Area (acres) -	112

Note 9.26 is not endorsed for use  
by the GRMF I.

No. of sites with:  
 Recreation Enhancement - 5  
 Cultural Resources Impacts - 0  
 Wetlands Affected:  
 Types 1, 2 (acres) - 25  
 Types 3, 4, 5 (acres) - 43

Table 2-  
Pool 9 Dredging Volumes

Item	Cut Name	Above Crooked Slough		Above Atchafalaya		Lansing Upper Light		Indian Camp Light		De Soto	
		Cut 1 With GREAT	Cut 2 Without GREAT	Cut 3 With GREAT	Cut 4 Without GREAT	Cut 5 With GREAT	Cut 5 Without GREAT	Cut 5 With GREAT	Cut 5 Without GREAT	Cut 5 With GREAT	Cut 5 Without GREAT
1955 - 1974 average annual dredging volume		2,000	2,000	4,400	4,400	41,700	41,700	20,200	20,200	3,900	3,900
Bank width changes (percent)		-	-	-56	-	-56	-	-	-	-	-
Adjusted average annual volume		2,000	2,000	1,900	4,400	18,300	41,700	20,200	20,200	3,900	3,900
Change for 1986 - 2000 (percent)		-34	-19	-34	-19	-34	-19	-34	-19	-34	-19
Adjusted average annual volume		1,300	1,600	1,300	3,600	12,100	33,800	13,300	16,400	2,600	3,200
Total volume dredged, 1986 - 2000		19,500	20,000	19,500	54,000	181,500	507,000	199,500	246,000	39,000	48,000
Change for 2001 - 2025 (percent)		-37	-36	-37	-36	-37	-36	-37	-36	-37	-36
Adjusted average annual volume		1,300	1,300	1,200	2,800	11,500	26,700	12,700	12,900	2,500	2,500
Total volume dredged, 2001 - 2025		32,500	32,500	30,900	70,000	287,500	667,500	317,500	322,500	62,500	62,500
Total volume dredged, 1986 - 2025		52,000	56,500	49,500	124,000	469,000	1,174,500	517,000	568,500	101,500	110,500
Frequency of dredging (percent)		5	5	5	5	60	60	25	25	5	5
Expected number of dredging jobs (1986 - 2025)		2	2	2	2	24	24	10	10	2	2
Average dredging volume per job		26,000	28,200	24,800	62,000	19,500	48,900	51,700	56,800	50,800	55,200

Note: All volumes in Cubic Yards

Table 2- (cont.)

Item	Cut Name	Pool 9 Dredging Volumes						Lower Approach L/D 8
		Cut 6 With GREAT	Cut 6 Without GREAT	Cut 7 With GREAT	Cut 7 Without GREAT	Cut 8 With GREAT	Cut 8 Without GREAT	
		Twin Island	Below Twin Island	Twin Island	Below Twin Island	Twin Island	Island 126	
1955 - 1974 average annual dredging volume	14,200	14,200	500	500	14,100	14,100	16,400	3,100
Bed width changes (percent)	-	-	-	-	-	-	-	-
Adjusted average annual volume	14,200	14,200	500	500	14,100	14,100	16,400	3,100
Change for 1986 - 2000 (percent)	-34	-19	-34	-19	-34	-19	-34	-9 (1)
Adjusted average annual volume	9,400	11,500	300	400	9,300	11,400	7,800	2,400
Total volume dredged, 1986 - 2000	141,000	172,500	4,500	6,000	139,500	171,000	117,000	36,000
Change for 2001 - 2025 (percent)	-37	-36	-37	-36	-37	-36	-37	-27 (1) -26 (1)
Adjusted average annual volume	8,900	9,100	300	300	8,900	9,000	7,400	10,500
Total volume dredged, 2001 - 2025	222,500	227,500	7,500	7,500	225,000	225,000	185,000	262,500
Total volume dredged, 1986 - 2025	363,500	400,000	12,000	13,500	362,000	396,000	302,000	462,000
Frequency of dredging (percent)	30	30	5	5	45	45	25	25
Expected number of dredging jobs (1986 - 2025)	12	12	2	2	18	18	10	10
Average dredging volume per job	30,300	33,300	6,000	6,800	20,100	22,000	30,200	46,200
							23,400	24,900

Note: All volumes in Cubic Yards

(1) Cut in approach to rigid structures

DREDGED MATERIAL PLACEMENT SITE

POOL: 9  
CUT: 1  
SITE: 9.47

EXISTING CONDITIONS DESCRIPTION

SITE: 9.47

Page 1 of 3

CUT LOCATION: 653.6 (Above Crooked Slough)

PLACEMENT SITE LOCATION: 653.6 - 654.6

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980): 629'  
100-year flood: 633.5'  
5-year flood: 626'  
Flat pool: 619.8'

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): No  
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100  
% Wetland: 0  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: None in immediate area  
Residence: More than 1,000 ft.  
Beneficial Use Site: 0  
Other: Site is adjacent to power plant.

VEGETATION CHARACTER: Industrial development has already taken place at site,  
scrub brush vegetation.

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: Higgin's Eye mussel found adjacent to site  
Historical or archeological value: Unknown  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Large clam beds located adjacent to site.

Waterfowl nesting, fish feeding adjacent.

Socioeconomic: Power plant property.

Adjacent land use: Navigation channel, rail line, state highway, electrical  
generating plant.

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 9  
CUT: 1  
SITE: 9.47

Page 2 of 3

SITE: 9.47

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 17,000  
Area at base (acres): 1  
Height (feet): 10  
Length (feet): 300  
Width (feet): 200  
Side slope (ratio): 4:1  
Final elevation (feet): 639

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 2/40  
Volume dredged per job (cubic yards): 26,000  
Beneficial use demand (cubic yards): 126,000  
Beneficial Use by: Allamakee County  
Other cuts using sites: Pool 9; 1,2,3

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 91  
Silt (%): 9  
Other (%): 0  
Contaminants: Minor  
Contaminant Source: N/A

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): Yes  
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None  
Revegetation: None  
Other: None  
Areas and features protected by erosion control:

DREDGED MATERIAL PLACEMENT SITE

POOL: 9  
CUT: 1  
SITE: 9.47

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

(Continued from previous page)

Page 3 of 3

SITE: 9.47

SPECIAL CONDITIONS FOR SITE USE: Material must be removed during placement operation to have sufficient capacity.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	0
Wetlands altered:	0	0
Open water filled:	0	0
Upland altered:	1	0
Endangered Species habitat lost:	None	None
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

Above Crooked Slough  
POOL: 9  
CUT: 1  
SITE: 9.47

Frequency: 5%  
2 / 40 yrs  
Volume per job: 26,000 cu yds

CHANNEL MAINTENANCE PLAN COSTS  
PER DREDGING JOB

	TYPES OF DREDGES					
	<u>PIPELINE</u>	MECHANICAL				
		<u>20 inch</u>	<u>16 inch</u>	<u>12 inch</u>	<u>Backhoe</u>	<u>Clamshell</u>
				<u>350 H.P.</u>	<u>700 H.P.</u>	<u>350 H.P.</u>
Basic Dredging Operation	\$316,000*	\$343,000*	\$340,000*	\$138,000*	\$147,000*	\$155,000*
Berming Costs	5,000	6,000	8,000	-	-	-
Diking Costs	7,000	6,000	5,000	-	-	-
Riprapping Costs	21,000	21,000	21,000	21,000	21,000	21,000
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	1,000*	1,000*	1,000*	1,000*	1,000*	1,000*
Total of GREAT recommended Actions	317,000	341,000	140,000	148,000	156,000	173,000
Average Annual Costs	15,900	17,200	17,100	7,000	7,400	7,800

\*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 9  
CUT: 1  
SITE: 9.41

EXISTING CONDITIONS DESCRIPTION

SITE: 9.41

Page 1 of 3

CUT LOCATION: 653.6 - 654.6 (Above Crooked Slough)

PLACEMENT SITE LOCATION: 652.7

TYPE OF PLACEMENT SITE: Permanent  Temporary \_\_\_\_\_

ELEVATIONS AT SITE:

Site (1980):	approx.	627
100-year flood:		633
5-year flood:		625.5
Flat pool:		620.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): No  
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 50  
% Wetland: 50  
% Open water:

DISTANCE FROM SITE TO:

Open Water: 200'  
Wetland: 0  
Residence: 3,000'  
Beneficial Use Site: 0  
Other:

VEGETATION CHARACTER: Willow, maple, scrub

SITE OWNER: ?

SPECIAL CONCERNS:

Endangered species habitat: None  
Historical or archeological value: Unknown  
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Furbearers, fish spawning, passerine birds  
Socioeconomic: none  
Adjacent land use: Railroad, state highway, river bluff.

DREDGED MATERIAL PLACEMENT SITE

POOL: 9  
CUT: 1  
SITE: 9.41

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

Page 2 of 3

SITE: 9.41

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 135,000  
Area at base (acres): 8.5  
Height (feet): 10  
Length (feet): Triangle 500 X 600 X 850  
Width (feet): "  
Side slope (ratio): --  
Final elevation (feet): Approx. 637

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 2/40  
Volume dredged per job (cubic yards): 26,000  
Beneficial use demand (cubic yards): 332,000  
Beneficial Use by: Seneca Township, Crawford County  
Other cuts using sites: None

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 91  
Silt (%): 9  
Other (%):  
Contaminants: Minor  
Contaminant Source: -

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): Yes  
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: No  
Revegetation: Yes  
Other:  
Areas and features protected by erosion control: Adjacent backwaters  
in river.

DREDGED MATERIAL PLACEMENT SITE

POOL: 9

CUT: 1

SITE: 9.41

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

(Continued from previous page)

Page 3 of 3

SITE: 9.41

SPECIAL CONDITIONS FOR SITE USE: Will need rehandling at outlet of Coulee and probably will require small hydraulic dredge for rehandling.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	4	1 & 3
Wetlands altered:	0	0
Open water filled:	0	0
Upland altered:	4.5	?
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:

Historical/Archeological sites were not found:

Historical/Archeological survey not made:

**Above Crooked Slough**  
**POOL:** 9  
**CUT:** 1  
**SITE:** 9.41

**Frequency:** 5<sup>2</sup>  
 2 / 40 yrs  
**Volume per Job:** 26,000 cy

**CHANNEL MAINTENANCE PLAN COSTS**  
**PER DREDGING JOB**

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe	350 H.P.	Clamshell 350 H.P.
<b>Basic Dredging Operation</b>	\$305,000*	\$338,000*	\$336,000*	\$128,000*	\$126,000*	\$142,000*
<b>Berming Costs</b>	5,000	6,000	8,000	0	0	0
<b>Diking Costs</b>	7,000	6,000	5,000	0	0	0
<b>Riprapping Costs</b>	21,000	21,000	21,000	21,000	21,000	21,000
<b>Seasonal Removal</b>	0	0	0	0	0	0
<b>Special Construction (1)</b>	15,000*	15,000*	12,000*	2,000*	2,000*	2,000*
<b>Land Acquisition</b>	0	0	0	0	0	0
<b>Total of GREAT recommended Actions</b>	320,000	353,000	348,000	130,000	128,000	144,000
<b>Average Annual Costs</b>	16,000	17,700	17,400	6,500	6,400	7,200

**\*GREAT recommended actions**  
 (1) Crossing railroad tracks.

DREDGED MATERIAL PLACEMENT SITE  
EXISTING CONDITIONS DESCRIPTION

POOL: 9  
CUT: 2  
SITE: 9.47

SITE: 9.47

Page 1 of 3

CUT LOCATION: 660.3 - 660.8 (Above Atchafalaya)

PLACEMENT SITE LOCATION: 659.8

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980): 629  
100-year flood: 633.5'  
5-year flood: 626'  
Flat pool: 619.8'

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): No  
Site below ordinary high water mark: No  
Site is in flood fringe.

SITE CHARACTER:

% Upland: 100  
% Wetland: 0  
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent  
Wetland: None in immediate area.  
Residence: More than 1,000'  
Beneficial Use Site: 0'  
Other: Site is adjacent to power plant.

VEGETATION CHARACTER: Industrial development has already taken place at site,  
scrub brush vegetation.

SITE OWNER: Private.

SPECIAL CONCERNS:

Endangered species habitat: Higgins Eye mussel found adjacent to sites.  
Historical or archeological value: Unknown.  
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Large clam beds located adjacent to site, waterfowl  
nesting, fish feeding adjacent.  
Socioeconomic: Power plant property.

Adjacent land use: Navigation channel, rail line, state highway, electrical/  
generating plant.

DREDGED MATERIAL PLACEMENT SITE  
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 9  
CUT: 2  
SITE: 9.47

Page 2 of 3

SITE: 9.47

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 17,000  
Area at base (acres): 1  
Height (feet): 10  
Length (feet): 300  
Width (feet): 200  
Side slope (ratio): 4:1  
Final elevation (feet): 639

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 2/40  
Volume dredged per job (cubic yards): 24,800  
Beneficial use demand (cubic yards): 126,000  
Beneficial Use by: Alamakee County  
Other cuts using sites: 1, 2, 3

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100  
Silt (%):  
Other (%):  
Contaminants: Minor  
Contaminant Source: -

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None  
Revegetation: None  
Other: None

Areas and features protected by erosion control:

DREDGED MATERIAL PLACEMENT SITE

POOL: 9

CUT: 2

SITE: 9.47

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

(Continued from previous page)

Page 3 of 3SITE: 9.47

SPECIAL CONDITIONS FOR SITE USE: Material must be removed during placement operation to have sufficient capacity.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	1	industrial developed
Endangered Species habitat lost:	None	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:Historical/Archeological sites known to exist: Historical/Archeological sites were not found: Historical/Archeological survey not made:

DREDGED MATERIAL PLACEMENT SITE  
EXISTING CONDITIONS DESCRIPTION

POOL: 9  
CUT: 2  
SITE: 9.26

SITE: 9.26

Page 1 of 3

CUT LOCATION: 660.3 - 660.8 (Above Atchafalaya)

PLACEMENT SITE LOCATION: RM 664

TYPE OF PLACEMENT SITE: Permanent  Temporary

ELEVATIONS AT SITE:

Site (1980): Submerged  
100-year flood: 634'  
5-year flood: 627'  
Flat pool: 620'

FLOOD STAGE FACTORS:

Site within floodplain: Yes  
Site within floodway (effective flow area): Yes  
Site below ordinary high water mark: Yes

SITE CHARACTER:

% Upland: 0  
% Wetland:  
% Open water: 100

DISTANCE FROM SITE TO:

Open Water: 0'  
Wetland:  
Residence: Less than 200'  
Beneficial Use Site: 0'  
Other: Site is adjacent to marina.

VEGETATION CHARACTER:

SITE OWNER: Federal.

SPECIAL CONCERNS:

Endangered species habitat: Maybe mussel bed area.  
Historical or archeological value: Unknown  
Other: None.

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning ground, migratory waterfowl feeding ground, furbearers, mussels.  
Socioeconomic: None  
Adjacent land use: Residential, navigation channel, marina, rail line, state highway.

DREDGED MATERIAL PLACEMENT SITE

POOL: 9  
CUT: 2  
SITE: 9.26

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

(Continued from previous page)

Page 3 of 3

SITE: 9.26

SPECIAL CONDITIONS FOR SITE USE: Any excess material not needed for marina development will be trucked to other beneficial use site from 9.26.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	None	
Open water filled:	22	
Upland altered:	None	
Endangered Species habitat lost:	May be habitat for Higgin's Eye mussel	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

Above Atchafalaya  
 F.O.U.: 9  
 C.U.T.: 2  
 SITE: 9.26

Frequency: 5%  
 2/40 yrs  
 Volume per Job: 24,800 cu

CHANNEL MAINTENANCE PLAN COSTS  
 PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe	350 H.P.	700 H.P.
Basic Dredging Operation	\$289,000*	\$322,000*	\$321,000*	\$ 122,000*	\$120,000*	\$135,000*
Berming Costs	5,000	7,000	8,000	0	0	0
Diking Costs	7,000	6,000	5,000	0	0	0
Riprapping Costs	55,000	55,000	55,000	55,000	55,000	55,000
Seasonal Removal	0	0	0	0	0	0
Special Construction	6,000(1)*	6,000(1)*	6,000(1)*	6,000(1)*	6,000(1)*	6,000(1)*
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	295,000	328,000	327,000	128,000	128,000	141,000
Average Annual Costs	14,800	16,400	16,400	6,400	6,400	7,100

GREAT recommended actions

(1) Unusual placement of material off of barges onto the site, which will be partially in water placement, decreases the productivity of the physical plant.

DREDGED MATERIAL PLACEMENT SITEPOOL: 9  
CUT: 3  
SITE: 9.26EXISTING CONDITIONS DESCRIPTIONSITE: 9.26Page 1 of 3CUT LOCATION: 663.8 - 665.0 (Lansing Upper Light)PLACEMENT SITE LOCATION: RM 664TYPE OF PLACEMENT SITE: Permanent  Temporary ELEVATIONS AT SITE:

Site (1980):	Submerged
100-year flood:	634'
5-year flood:	627'
Flat pool:	620'

FLOOD STAGE FACTORS:

Site within floodplain:	Yes
Site within floodway (effective flow area):	Yes
Site below ordinary high water mark:	Yes

SITE CHARACTER:

% Upland:	0
% Wetland:	
% Open water:	100

DISTANCE FROM SITE TO:

Open Water:	0'
Wetland:	0'
Residence:	Less than 200'
Beneficial Use Site:	0'
Other:	Site is adjacent to marina.

VEGETATION CHARACTER:SITE OWNER: Federal.SPECIAL CONCERNS:

Endangered species habitat:	May be mussel bed.
Historical or archeological value:	Unknown
Other:	None

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning ground, migratory waterfowl feeding ground, furbearers, mussels.  
Socioeconomic: None.

Adjacent land use: Residential, navigation channel, marina, rail line, state highway.

DREDGED MATERIAL PLACEMENT SITE

POOL: 9  
CUT: 3  
SITE: 9.26

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

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SITE: 9.26

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): Unknown\*  
Area at base (acres): 22  
Height (feet): Unknown  
Length (feet): 1,400  
Width (feet): 700  
Side slope (ratio): 4:1  
Final elevation (feet): Unknown

\*(Size of area is sufficient to accommodate volumes-679,000cy. Area will be  
ESTIMATED SITE USE SCHEDULE: designed according to marina needs).

Frequency cut is dredged: 24/40  
Volume dredged per job (cubic yards): 19,500  
Beneficial use demand (cubic yards): 821,000  
Beneficial Use by: Lansing, Allamakee Co. at site recreational development  
Other cuts using sites: 2,

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 99  
Silt (%): -  
Other (%): 1 (Gravel)  
Contaminants: Minor  
Contaminant Source: -

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X  
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes  
Revegetation: None  
Other: None

Areas and features protected by erosion control: Possible mussel bed downstream and downstream wing dams and riprap.

DREDGED MATERIAL PLACEMENT SITE

POOL: 9  
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SITE: 9.26

SITE DEVELOPMENT DESCRIPTION AND IMPACTS  
(Continued from previous page)

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SITE: 9.26

SPECIAL CONDITIONS FOR SITE USE: Excess material not needed for marina development will be trucked to other beneficial use sites from 9.26.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	None	
Open water filled:	22	
Upland altered:	None	
Endangered Species habitat lost:	May be habitat for Higgin's Eye mussel	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist:   
Historical/Archeological sites were not found:   
Historical/Archeological survey not made:

**Lansing Upper Light**POOL:

9

CUT:

3

SITE:

9.26

**Frequency: 60%**24 /40 yrs  
Volume per job: 19,500 cy

**CHANNEL MAINTENANCE PLAN COSTS**  
**PER DREDGING JOB**

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe	350 H.P.	700 H.P.
<b>Basic Dredging Operation</b>	\$ 231,000(1)*	\$184,000(1)*	\$ 203,000(1)*	\$ 83,000*	\$ 92,000*	\$ 106,000*
Berming Costs	7,000	6,000	7,000	0	0	0
Diking Costs	8,000	6,000	4,000	0	0	0
Riprapping Costs	55,000	55,000	55,000	55,000	55,000	55,000
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	6,000(2)*	6,000(2)*	6,000(2)*	6,000(2)*	6,000(2)*
Land Acquisition	0	0	0	0	0	0
<b>Total of GREAT recommended Actions</b>	231,000	190,000	209,000	89,000	98,000	112,000
<b>Average Annual Costs</b>	138,600	114,000	125,400	53,400	58,800	67,200

**\*GREAT recommended actions**

- (1) Reduced an arbitrary 30% because the majority of the dredging occurs in the lower portion of the cut, i.e. nearest the disposal site.
- (2) Unusual placement of material off of barges onto the site, which will be partially in water placement, decreases the productivity of the physical plant.